

There has been an increase in disease pressure for most crops in parts of Saskatchewan over the past number of years, primarily due to above average precipitation and tightening crop rotations. In 2012, producers encountered unprecedented levels of both fusarium head blight in cereals and sclerotinia stem rot in canola, resulting in dramatically reduced yields and quality. Many producers do not routinely use fungicides and are not confident in making the decision of whether or not to invest in this technology. Since 2004, IHARF has been conducting field-scale evaluations of a variety of fungicide products and crops. All trials were replicated a minimum of three times throughout the field with fungicide products applied using a high-clearance sprayer (80' boom width) equipped with GPS and auto steering.

Having been completed over a large number of years and wide range of weather and crop conditions, these evaluations provide a good assessment of the long-term probability of response and average yield increases associated with fungicide applications. It is important to note that yield increases with fungicide applications cannot be expected each and every year with most crops in Saskatchewan; however, when disease is present, fungicide application can prevent substantial yield loss. Consequently, to maximize returns on investment, fungicides should ideally only be applied to most crops when there is sufficient disease pressure and a reasonably high likelihood of response. Scouting for disease on each field and on a regular basis, while monitoring environmental conditions and weather forecasts, is the best way to make informed decisions regarding whether or not to spray. For some diseases, (e.g. sclerotinia and fusarium head blight) symptoms do not appear until long after the fungicide application window and past observations and disease issues should also be taken into consideration.

increases were only statistically significant 38% of the time, there was a consistent trend for higher yields with fungicide, which over seven growing seasons, averaged nearly 12%. Both barley and oat responded positively to fungicide application with reasonable consistency, 50-60% of the years where trials were conducted; however, the magnitude of response tended to be higher for barley with an overall average increase of 11% compared to 6% for oats. Canaryseed yield increases with fungicide application were detected each year since 2008 with an average yield increase of 23%. With wet weather and relatively high disease levels for much of Saskatchewan in recent years, fungicides need to be regarded as important tools for maximizing crop yields and maintaining grain quality. However, because responses do not occur under all conditions, growers are strongly encouraged to monitor their crops closely and base their decisions on the actual risk of disease, past disease issues, the crop's overall yield potential and economic considerations such as current grain prices and the cost of the fungicide application.

To download a copy of the full field-scale fungicide results, please visit:

<http://iharf.ca/Full Reports.php>

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Crop Type	# of years	Response Frequency	Check Yield	Treated Yield	Yield Increase
		---- % ----	----- bu/ac -----	----- % ----	
Spring Wheat	6	33	57.8	60.2	4.4
Barley	5	60	89.6	98.4	11.3
Oat	5	50	137.4	145.5	5.9
Canaryseed	6	100	31.2	38.4	23.2
Field Pea	8	38	49.0	54.2	11.7
Canola	6	33	44.3	45.9	4.3

Spring wheat and canola tended to be the least responsive to fungicide, with significant yield increases detected only 33% of the time and mean yield increases of only 4.3-4.4% over the long-term. While field pea yield